

**APPARATUS FOR PROVIDING
TRANSVERSE MAGNETIC BIAS PROXIMATE TO A POLE TIP**

ABSTRACT

5 An apparatus for providing transverse magnetic bias proximate to a pole tip to
speed up the switching time of the pole-tip during the writing operation is disclosed. The
transverse field disposed proximate the pole-tip helps the conventional driving field in
rotating the magnetization through the first 90-degrees, especially at small angle where
the effective anisotropy-field is strongest in opposing the conventional driving field. By
10 offsetting the magnetization from its easy-axis, the transverse field also increases the
torque that the collinear driving field would have on the magnetization.